



US009410097B2

(12) **United States Patent**
Leininger

(10) **Patent No.:** **US 9,410,097 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **METHODS AND SYSTEMS OF PRODUCING A PARTICULATE FREE, COOLED SYNGAS PRODUCT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 553 days.

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(21) Appl. No.: **13/833,179**

(22) Filed: **Mar. 15, 2013**

(65) **Prior Publication Data**

US 2014/0259924 A1 Sep. 18, 2014

Kim, M. C., et al., "Design Modification of Virtual Impactor for Enhancing Particle Concentration Performance," Aerosol Science and Technology, Mar. 3, 2000, pp. 233-242, Taylor and Francis.
PCT Search Report & Written Opinion issued May 19, 2014 in connection with corresponding PCT Patent Application No. PCT/US2014/018554.

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(51) **Int. Cl.**

C10J 3/84 (2006.01)

C10K 1/02 (2006.01)

B01D 45/08 (2006.01)

C10J 3/48 (2006.01)

(52) **U.S. Cl.**

CPC . **C10K 1/022** (2013.01); **C10J 3/84** (2013.01);
C10K 1/02 (2013.01); **B01D 45/08** (2013.01);
C10J 3/485 (2013.01); **C10J 2300/093**
(2013.01); **C10J 2300/0959** (2013.01); **C10J**
2300/0976 (2013.01); **C10J 2300/1603**
(2013.01); **C10J 2300/1653** (2013.01); **C10J**
2300/1675 (2013.01); **C10J 2300/1678**
(2013.01); **Y02E 20/18** (2013.01)

(58) **Field of Classification Search**

CPC **C10K 1/002**; **C10J 2300/0959**; **C10J**
2300/0976

See application file for complete search history.

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(57)

ABSTRACT

Methods and systems for gasifier system are provided. The system includes a two-stage particulate separator having a side draw-off connector configured as a first virtual impactor, the first virtual impactor configured to separate a substantially particulate free flow of a reaction product from a particulate laden flow of the reaction product. The two-stage particulate separator also includes a transfer line coupled downstream of said draw-off connector, a second virtual impactor coupled downstream of the transfer line, and a quench chamber coupled downstream from the second virtual impactor, such that the quench chamber is configured to receive at least the particulate laden flow of the reaction product.

15 Claims, 7 Drawing Sheets

